

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#7  
R. Houston  
2/23/2002

Applicant: ONO et al. Examiner: J. MITCHELL  
Serial No.: 09/842,487 Group Art Unit: 2822  
Filed: April 25, 2001 Docket: 10873.447USD1  
Due Date: February 7, 2002  
Title: SEMICONDUCTOR DEVICE  
(PREVIOUSLY: "MANUFACTURING METHOD FOR SEMICONDUCTOR DEVICE,  
MOUNTING METHOD OF SEMICONDUCTOR DEVICE, SEMICONDUCTOR DEVICE,  
AND INSPECTING METHOD OF SEMICONDUCTOR DEVICE.")

CERTIFICATE UNDER 37 CFR 1.10

'Express Mail' mailing label number: EL 036304012 US

Date of Deposit: February 7, 2002

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By: 

Chris Stordahl

BOX NON-FEE AMENDMENT

Commissioner for Patents  
Washington, D.C. 20231

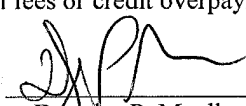
Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Amendment
- ☒ Version with markings to show changes made
- ☒ Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers or any future reply, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

MERCHANT & GOULD P.C.  
P.O. Box 2903, Minneapolis, MN 55402-0903  
612.332.5300

By:   
Name: Douglas P. Mueller  
Reg. No. 30,300  
DPM:MLL:tlh



Partial English Translation of JP 63 (1988)-186448 A

Publication Date: August 2, 1988

Title of the Invention: SEMICONDUCTOR DEVICE

5 Application Number: 62 (1987)-19023

Application Date: January 28, 1987

Applicant: Mitsubishi Electric Corp.

Inventor: Hisao MASUDA et al.

10 [translation of line 3 from the bottom of the lower right column on page 1  
(page 253) – line 5 of the upper left column on page 2 (page 254)]

Therefore, in this case, when a plane circular-shaped compressed metal ball 6 of a metal wire 5 is compression-bonded onto a plane quadrangle-shaped bond surface 2a of an aluminum electrode 2, a portion that is not in relation to bonding, that is, an unnecessary portion "b" is increased in not only the periphery of a compressed portion "a" necessary to bonding but also, in particular, in four corners. Thus, generally, the exposed portion on the electrode is expanded after the metal ball is bonded to the electrode.

20 [translation from line 9 from the bottom of lower left column to line 2 of the lower right column on page 3 (page 255)]

As mentioned above in detail, according to the invention, in the structure of the electrode of a semiconductor chip, the bond surface of the electrode is formed in a plane polygonal shape in which each corner angle thereof becomes larger. Consequently, after the compressed metal ball portion of the metal wire is compression-bonded onto the electrode, an exposed portion on the bond surface of the electrode can be significantly reduced. Furthermore, the size of the electrode itself can be reduced as well, thus increasing the degree of freedom in arranging elements, wiring, or the like, and facilitating designing the circuit of the device. Furthermore, the area of the electrode and also the area of the chip can be reduced.

Verification of Translation

U.S. Patent Application Serial No.:09/379,046

Title of the Invention: MANUFACTURING METHOD FOR  
SEMICONDUCTOR DEVICE, MOUNTING METHOD OF  
SEMICONDUCTOR DEVICE, SEMICONDUCTOR DEVICE, AND  
INSPECTING METHOD OF SEMICONDUCTOR DEVICE

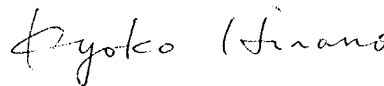
I, Kyoko HIRANO, whose full post office address is IKEUCHI· SATO &  
PARTNER PATENT ATTORNEYS, 26th Floor, OAP TOWER, 8-30,  
Tenmabashi 1-Chome, Kita-ku, Osaka-Shi, OSAKA 530-6026, JAPAN

am the translator of the documents attached and I state that the  
following is a true translation to the best of my knowledge and belief of  
Official Gazette of JP63 (1988)-186448 A (partial).

At Osaka, Japan

DATED this January 23, 2002

Signature of the translator



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Kyoko HIRANO

S/N 09/842,487

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: ONO ET AL Examiner: J. MITCHELL  
Serial No.: 09/842,487 Group Art Unit: 2822  
Filed: / APRIL 25, 2001 Docket No.: 10873.447USD1  
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By: 

Chris Stordahl

AMENDMENT

BOX NON-FEE AMENDMENT  
Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

In response to the final Office Action mailed November 7, 2001, Applicants provide the  
following amendments and remarks.

In the Specification

Please amend the title to read as follows:

SEMICONDUCTOR DEVICE

In the Claims

Please amend claims 22 and 23 to read as follows.